

Postdoctoral Research Fellow - tradeoffs, synergies and economic costs associated with policies and management practices focused on sustainable agriculture

Dr. David Johnson (Industrial Engineering & Political Science, Purdue University) is seeking a postdoctoral research fellow to work on an NSF-funded study of the tradeoffs, synergies and economic costs associated with policies and management practices focused on sustainable agriculture (https://www.nsf.gov/awardsearch/showAward?AWD_ID=1855937). The project emphasizes cross-system and cross-scale impacts, such as how demand for bio-based energy to reduce greenhouse gas emissions contributes to cross-system (e.g., nitrate leaching and groundwater depletion) and cross-scale (e.g., indirect land use change) externalities.

The postdoc will be primarily supervised by Prof. Johnson, but will also work with Dr. Thomas Hertel and other agricultural economists and high-performance computing specialists at Purdue University, hydrologists at University of New Hampshire, and agronomists at University of Wisconsin-Madison. Using a multi-model, gridded representation of global agriculture and hydrology, they will design experiments to analyze the impacts of various policies (e.g., nitrogen management practices, restrictions on groundwater withdrawals for irrigation) to identify combinations of policies that achieve sustainability objectives while minimizing negative impacts. Networking and professional development opportunities will be facilitated through participation in the NSF-funded GLASSNET (Global-Local-Global Analysis of Systems Sustainability Network of Networks); more information is available at <https://mygeohub.org/groups/glassnet>.

A successful applicant should have experience with multi-criteria decision analysis, spatial optimization, and the challenges of designing policy experiments with complex models. At the time of appointment, applicants should have a PhD in systems engineering, agricultural and/or applied economics, policy analysis, or a related field. Experience in methods for decision-making under uncertainty, surrogate modeling, and GIS analysis are also desirable.

To apply, please submit a CV, graduate transcript, statement of interest addressing your experience in these areas, and names and email addresses of three references, to davidjohnson@purdue.edu.

The position will start as soon as a suitable applicant is identified, with an anticipated end date of July 31, 2023; further renewal depends on performance and availability of funds. Salary will be commensurate with training and experience.